Oct. 6, 1942. J. W. PINKERTON ET AL 2,298,227

RESOLING AND REHEELING MOLD FOR FOOTWEAR

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Fig. 1

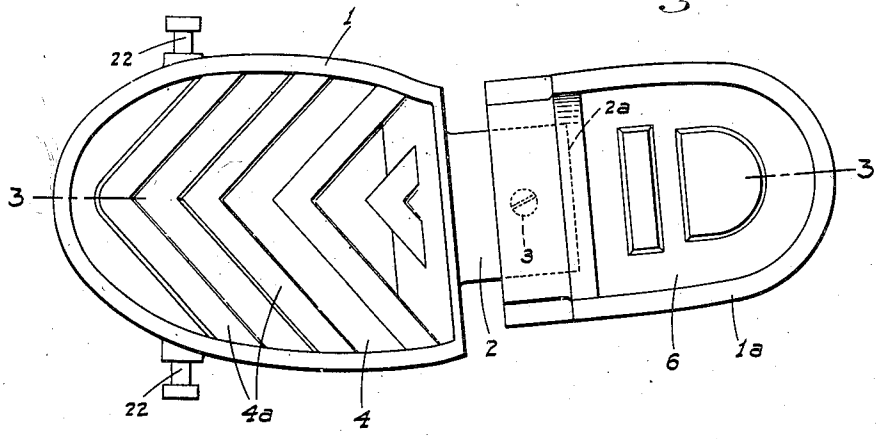


Fig. 2

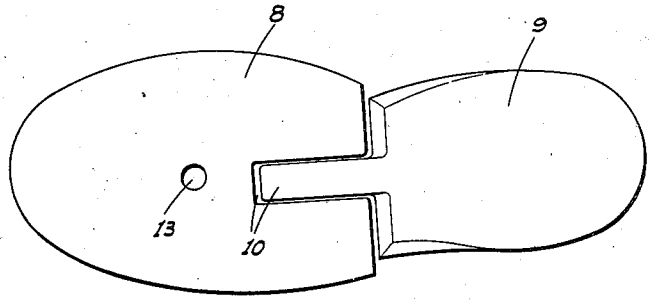
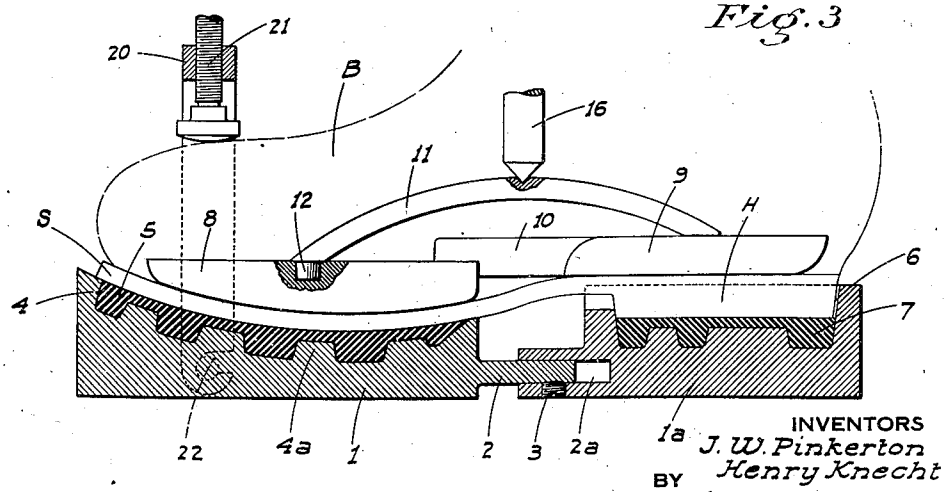


Fig. 3



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Fig. 4

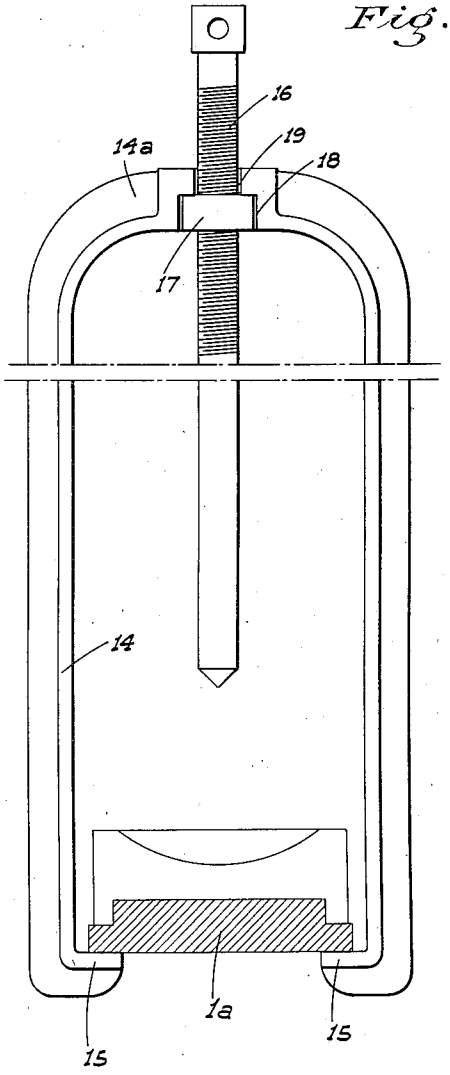


Fig. 6

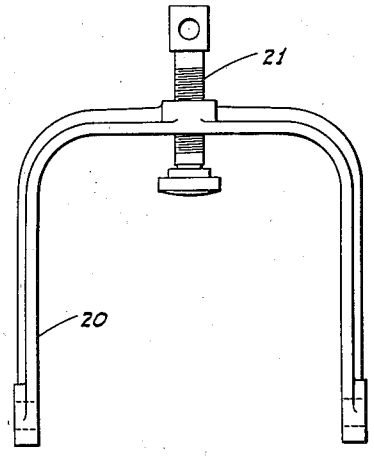
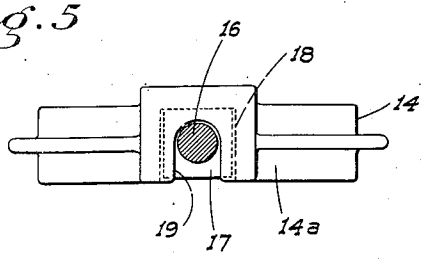


Fig. 5



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UNITED STATES PATENT OFFICE

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RESOLING AND REHEELING MOLD FOR FOOTWEAR

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Application October 28, 1940, Serial No. 363,132

4 Claims. (Cl. 18—34)

This invention relates to the shoe repair industry, and particularly to the application of rubber soles and heels to heavy duty rubber boots such as those worn by miners and the like, after the original soles and heels have been worn down.

The principal object of our invention is to provide a mold by means of which the replacement sole and heel may be applied to a boot at one operation, and in the proper location relative to each other, while at the same time maintaining the new sole and heel rubber initially separate so that such rubber is only applied where wear has occurred, and thus none is wasted, nor is the boot built up to an excessive thickness along the arch where no appreciable wear takes place.

A further object is to provide a mold, and certain necessary accessories, so constructed and arranged that a resoling operation may be quickly and easily carried out, and so that the finished job will be neat in appearance, besides giving excellent service.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a plan view of the mold.

Figure 2 is a similar view of the separable sole and heel pressure plates, assembled with each other.

Figure 3 is a sectional elevation of the mold on line 3—3 of Fig. 1 shown as in operation on a boot and with the pressure plates clamped in position.

Figure 4 is an elevation of the main clamp frame and screw, shown as attached to the mold.

Figure 5 is a plan view of the frame.

Figure 6 is an elevation of an auxiliary toe clamp.

Referring now more particularly to the characters of reference on the drawings, the mold comprises a rigid body unit preferably of aluminum and consisting of separate sole and heel members 1 and 1*a*, flat and on a common level on the bottom. The member 1 has a tongue 2 slidably projecting into a socket 2*a* in the member 1*a* and held in any position by a set screw 3, so that the members may be adjusted lengthwise of each other while being maintained as a rigid unit. Depressed in the upper face of the body member 1 is a recess 4 shaped to conform to the contour of the sole S of a rubber boot B, but slightly smaller in size, so that said sole may be supported on the mold all about said recess. The recess, which then forms an enclosed receptacle for the reception of a sole blank or new sole rubber 5, is provided with ribs 4*a* forming a non-skid and we believe novel design.

The top surface of member 1, and the recess therein, are concavely curved as shown, to correspond substantially to the natural or acquired curvature of the sole, so that the uppers of the boot need not be distorted in order to obtain proper vulcanizing contact of the sole with the new rubber.

Depressed in the upper face of the member 1*a* is a heel recess 6, also conforming in shape to and adapted to receive said heel therein. The sides of recess 6 are higher than those of recess 4, so that the heel projects between said sides, and the boot as a whole is properly located on the mold. The recess 6 also forms a reception for a heel blank or for a supply of rubber 7 for a new heel.

It will of course be understood that the sole and heel recesses are positioned to correspond to the positions of the sole and heel on a boot of a certain size, and it will also be realized that right and left hand molds are needed for any pair of boots, and that different sets of molds are necessary for boots of different sizes except for slight differences in the distance between the sole and heel, which are taken care of by adjusting member 1*a* relative to member 1. Since the sole and heel receptacles in a mold are separated from each other and are positioned to correspond to the positioning of the sole and heel on a boot to be repaired, it will be seen that a resoling and reheeling job can be performed at one operation without any possibility of mis-positioning, and without any slow try-and-fit procedures being necessary to assure a neat job. Also, no rubber will be applied between the sole and heel where it is not needed.

The mold, being of a material having high heat conductivity, may be used in connection with an ordinary steam vulcanizing plate, or it may be provided with a built-in heating means such as an electric resistance element.

After the original sole and heel material has been suitably buffed or otherwise treated and placed in position in the mold so that the sole and heel are in contact with the new rubber, the necessary contacting pressure is provided by means of sole and heel pressure plates 8 and

9 respectively, which are adapted to be placed inside the boot.

The plates are separate from each other, but are maintained in alinement lengthwise of the boot by a cooperating tongue and groove arrangement 10 at their adjacent ends, which enables the plates to shift relative to each other vertically of the boot, as the difference in level between the sole and heel inside the boot may require, but not transversely of the boot.

A rigid arch bar 11 is then placed in the boot to engage both plates, the bar at its forward end having a depending dowel 12 for locating engagement in a socket 13 in the sole plate 8.

An inverted U-clamp frame 14 then straddles the boot from above, the frame having laterally inturned feet 15 to engage under the mold on opposite sides as shown in Fig. 4. A clamping screw 16 for engagement with the bar 11 centrally of its length is mounted in connection with the frame by means of a nut 17 threaded on the screw and removably seated in a socket 18 formed in the head 14a of the frame and open to one side and the bottom of said head, which above the socket is slotted on the same side as at 19 to receive the screw.

By reason of this construction it will be seen that the screw, which goes into the boot from the top, may be easily placed or removed from position after the frame is in place, without the necessity of the screw being advanced or retracted all the way to clear the boot.

With very heavy boots, or when their soles are cushion lined, it is sometimes impossible to obtain sufficient pressure on the sole near the toe with the above described clamping device. In such cases, and when the boots are provided with rigid steel caps, I provide an auxiliary clamp. This comprises a relatively short inverted U-clamp frame 20 having a clamping screw 21 mounted therein to engage the boot cap and press the same down so that the adjacent portion of the sole is also pressed down. The sides of this frame at the bottom are horizontally slotted to engage pins 22 projecting from the sides of the mold near the front.

It may here be noted that while the improved mold has been particularly designed for use with heavy duty rubber boots, it is not of course limited to such use, and leather shoes, for instance, may be provided with rubber soles.

From the foregoing description it will be readily seen that we have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described our invention, what we claim as new and useful and desire to secure by Letters Patent is:

1. A resoling and reheeling mold for a boot comprising a rigid mold body adapted to be subjected to a vulcanizing heat and to provide a support for the bottom of the boot, means forming receptacles depressed in the upper surface of the mold for the reception of new sole and heel rubber, separate pressure plates placeable inside the boot on the sole and heel portions thereof, a rigid arch bar in the boot engaging both plates intermediate their ends, and means to press down on said bar including a screw engaging the bar intermediate its ends and extending upwardly to the top of the boot.

2. In a boot resoling mold to support the bottom of a boot and having a pressure plate unit placeable inside the boot, a clamping device for said unit including an inverted U-frame adapted to be connected to the mold in straddling relation to the mold and boot, and to extend to the top of the latter, a screw depending from the frame and adapted to extend into the boot to engage the unit and a nut threaded on the screw; the U-frame at the top having a socket open to one side to receive the nut and being also open on said side above the socket to receive the screw.

3. A resoling and reheeling mold comprising initially separate mold members, one member having an open-topped recess for sole rubber and the other member having an open-topped recess for heel rubber, and a sliding tongue and socket connection between the members to enable them to be adjusted lengthwise of each other and held against relative movement at any position of adjustment.

4. A resoling and reheeling mold comprising initially separate mold members, one member having an open-topped recess for sole rubber and the other member having an open-topped recess for heel rubber and means directly connecting the members for adjustment lengthwise of each other and maintaining them against relative movement at any adjusted position.

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